IN THE CLAIMS

Claim 1 (original): A method for measuring the presence or absence of phosphate groups attached to biological molecules in a sample, whereby these molecules are tagged with fluorescent markers and these fluorescent markers are activated by means of irradiating the sample with light, wherein the method encompasses the following steps:

a) Use of a fluorescent marker, the fluorescence lifetime of which assumes a different value depending upon the presence or absence of phosphate groups attached to the biomolecule;

b) Measurement of the fluorescence lifetime of the fluorescent marker attached to a biomolecule and selected in accordance with Step a);

c) Classification of the biomolecules in accordance with the presence or absence of phosphate groups attached to these, based on the different

15 lifetime of each.

Claim 2 (original): The method of Claim 1, wherein the biological molecules are selected from a group which comprises an amino acid sequence, such as proteins, peptides, glycoproteins and lipoproteins.

Claim 3 (original): The method of Claim 1, wherein the fluorescent marker is selected from the group which comprises fluorescein and fluorescein derivatives.

Claim 4 (original): The method of Claim 1, wherein the biological molecules of a sample are incubated with a phosphatase or with a phosphokinase prior to the measurement of the state of phosphorylation.

Claim 5 (original): The method of Claim 1, wherein one or more steps selected form the group of marking of biological molecules, activation of the assay, and measurement of the fluorescence lifetime is conducted in a multiwell plate, such as a microplate with 96, 384 or 1536 wells and with a computer for automatically classifying the biomolecules or the samples respectively.

Claim 6 (original): The method of Claim 1, wherein the measurement of the fluorescence lifetime is undertaken by means of time correlated single photon counting (TCSPC) or by means of the phase modulation technique.

Claim 7 (original): The method of Claim 1, wherein the proportion of the two species of biomolecules in the assay is quantified by means of calibration.

Claim 8 (currently amended): Use of the method in accordance with ~~one or several of the Claims 1 to 7~~ Claim 1 for drug discovery screening of chemical agents for pharmacologically effective substances.

Claim 9 (currently amended): Use of the method in accordance with ~~one or several of the Claims 1 to 7~~ Claim 1 for drug discovery screening of chemical agents

for manufacturing pharmacological preparations.

Claim 10 (currently amended): Use of the method in accordance with ~~one or several of the Claims 1 to 7~~ <u>Claim 1</u> for detecting defects in human or animal enzymes.

Claim 11 (currently amended): Use of the method in accordance with ~~one or several of the Claims 1 to 7~~ <u>Claim 1</u> for detecting a reaction involving enzymes from one of the Classes I-VI.

Claim 12 (currently amended): Use of the method in accordance with ~~one or several of the Claims 1 to 7~~ <u>Claim 1</u> for quantifying a reaction involving enzymes from one of the Classes I-VI.